

In the Background of the Invention

Please replace original paragraph [0002] at page 1, lines 12-16 with the following replacement paragraph [0002]:

[0002] There has been a growing interest in the manufacture and use of microfluidic systems for the acquisition of chemical and biological information. In particular, microfluidic systems allow complicated biochemical reactions to be carried out using very small volumes of liquid. These miniaturized systems ~~increase~~ improve the response time of the reactions, minimize sample volume, and lower reagent cost.

In the Detailed Description of the Invention

Please replace original paragraph [0038] at page 6, line 21 – page 7, line 5 with the following replacement paragraph [0038]:

[0036] Non-planar microfluidic devices according to the present invention may be constructed in various ways. Preferably, such devices utilize stencils to define channels and/or chambers. Methods of and materials for constructing microfluidic devices useful with the present invention are provided in ~~co-pending~~ U.S. Patent Application No. 09/453,029 and in its counterpart application, WIPO international publication number WO 01/25138 (published April 12, 2001), which ~~[[is]]~~ are incorporated by reference herein as if reproduced in full. The devices disclosed therein comprise one or more stencils containing microstructures, which are disposed and sealed between substrate layers. The stencils can be constructed from any of various suitable materials, including preferably (but not limited to) Mylar®, polyester, polyimide and adhesive tape. Additionally, one or more materials may advantageously be used to coat, seal, and/or adhere the channels formed between the substrates. Coating material(s) may be used to coat the channels, seal the channels, and/or adhere the channels to adjacent layers of the device. In certain embodiments, the channels of the microfluidic devices may be fully or partially filled (e.g., using silk screening technology or mechanical placement of solid filters such as paper filters) during the manufacturing process. Use of various materials, including polymers, and coatings, provide for microfluidic devices that can accommodate the use of a wide range of liquid reagents or solutions. Maintaining contact between layers of a microfluidic device according to the present invention may be established by various chemical, mechanical, and physical means. For example, pressure-sensitive, hot-melt, and UV-curable adhesives or epoxies may be used. Alternatively, ultrasonic, thermal, or electromagnetic sealing techniques may be employed.